

# MONTHLY WEATHER REVIEW,

APRIL, 1879.

(General Weather Service of the United States.)

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WAR DEPARTMENT,

Office of the Chief Signal Officer,

DIVISION OF

TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE.

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## INTRODUCTION.

In compiling the present REVIEW the following data, received up to May 14th, have been made use of, viz: the regular tri-daily weather charts, containing the data of simultaneous observations taken at 122 Signal Service stations and 12 Canadian stations, as telegraphed to this office; monthly journals and means, 134 and 150 respectively, from the former, and monthly means from 14 of the latter; reports from 28 special Sunset stations; 217 monthly registers from Voluntary Observers; 40 monthly registers from United States Army Post Surgeons; Marine Records; International Simultaneous Observations; monthly reports from Voluntary Observers in, and the local Weather Services of, the States of Iowa and Missouri; reliable newspaper extracts; special reports.

## BAROMETRIC PRESSURE.

Upon chart No. II is shown the general distribution of the atmospheric pressure, as reduced to sea-level, for the month by the isobaric lines. Compared with the means for April of previous years, the average pressure of the present month is lower for the Middle Atlantic and New England States from .02 of an inch in Virginia to .10 in Maine. It is about normal for the South Atlantic and Gulf coasts, and from the Pacific coast towards Utah and Montana. For the remaining districts it is higher; Ohio valley and Tennessee, from .03 to .08 inch; Lake region, from .00 along Lake Ontario to .09 on Lakes Michigan and Superior; Upper Mississippi valley, .05 to .07 inch; Lower Missouri valley, .03 to .12 inch; Red River of the North, .01 to .06 inch; Rocky Mountains and eastern slopes, .01 to .07 inch.

The Local Barometric Ranges for the month are as follows: California, from .34 of an inch at San Diego to .65 at Red Bluff; Oregon, 1.03 at Portland to 1.04 at Roseburg; Western Plateau, from .47 at Pioche to .65 at Salt Lake City; Rocky Mountains, from .64 at Virginia City and Cheyenne to .72 on Pike's Peak; eastern Rocky Mountain slope, from .78 at Deadwood and .92 at Fort Sill to 1.34 at North Platte; Gulf States, from .41 at Key West to .85 at Montgomery, .74 at New Orleans, .93 at Corsicana and 1.08 at Mason, Tex.; South Atlantic States, from .83 at Jacksonville to 1.02 at Charlotte, N. C.; Ohio valley and Tennessee, from .76 at Memphis to 1.18 at Pittsburg; Missouri valley, from .96 at Leavenworth to 1.29 at Yankton; Red River of the North valley, from 1.10 at Pembina to 1.13 at Breckenridge; Upper Mississippi valley, from .80 at St. Louis to .97 at Dubuque; Upper Lake region, from .74 at Duluth to 1.31 at Milwaukee; Lower Lake region, from .94 at Rochester to 1.08 at Toledo; Middle Atlantic States, from .97 at Norfolk to 1.18 at Albany; New England, from 1.17 at New Haven to 1.52 on Mt. Washington and 1.62 at Eastport.

*Areas of High Barometer.*—Of these eight are described. No. I generally produced the minimum temperatures of the month in Texas on the 2nd. No. II was quite remarkable in that the minimum temperatures over nearly the entire country from the Rocky Mountains eastward accompanied it; on the 3rd, from eastern Montana, Wyoming and Colorado eastward to Michigan, Lake Erie and the Ohio valley; 4th, Gulf States, (excepting Texas and Florida,) South Atlantic States, Middle States and northern New England; 5th, southern New England; 6th, northern Florida. No. IV generally caused the minimum temperatures from California to Utah on the 8th and 9th.

No. I—is a continuation of No. XI, described in the *March Review*. On the morning of the 1st it was central in Nebraska and southern Dakota, with clear weather and temperatures below freezing from Montana and Wyoming to Kansas and the Lakes; minimum temperature at Pembina,  $-8^{\circ}$ ; a. m. barometer

at Dodge City 0.29 inch above normal. 2nd, by morning it had moved southward to New Mexico and Texas; frost occurred in northern portion of latter. During the day it lost its distinctive features, on account of the sudden advance of the following.

No. II—began advancing southward from Manitoba, morning of the 2nd, over Dakota and Minnesota; a. m. barometer, (reduced to sea-level,) 30.54 inches, and minimum temperature  $-8^{\circ}$  at Fort Garry. 3rd, it was central in the morning near Fort Garry, with barometer 30.65; at Pembina it was 0.50 above the normal, and minimum temperature  $-10^{\circ}$ . The temperature was below freezing thence to Montana, Wyoming, Colorado, Indian Territory, the Alleghenies and Lake region. Over the interior of the Southern States frosts were produced. During the day it continued extending itself southward. 4th, in the morning it appeared as an extensive barometric ridge, reaching from central Texas to the Red River of the North. To the southeastward the temperature continued falling; in Tennessee, northern portions of Alabama and Georgia and the Atlantic States, except the immediate South Carolina coast, it fell to and below freezing. 5th, it covered the Mississippi valley, and central near Cairo; at Green Springs, Alabama, heavy white frost occurred the two previous mornings, and this morning blighted the leaves of many trees and killed peaches, &c. 6th, by midnight it had moved southeastward, with diminished central pressure, off the South Carolina coast.

No. III.—This high area seems to have formed from one which advanced northeastward from California over Nevada on the 5th, and another which progressed southward from Manitoba on the 6th. 7th, it was central in Minnesota during the morning; barometer at St. Paul 0.28 above normal. Later it passed southeastward over the Upper Ohio valley to the North Carolina coast. 9th, a. m. barometer at Cape Hatteras 30.28, or 0.32 above normal.

No. IV—appeared on the Pacific coast on the 8th; p. m. barometer at Red Bluff and Sacramento 0.28 above the normals. 9th, it advanced southeastward over Nevada and Utah towards Arizona and New Mexico. 10th, probably central over New Mexico in the morning, and by midnight appeared as a barometric ridge, extending from New Mexico and western Texas to Minnesota. 11th, by afternoon it was central over Lake Superior. 12th, morning, it covered the country from the Lakes to the Southern States, with cool, clear weather, and was central in Indiana. During the day it withdrew southeastward to the South Atlantic coast.

No. V.—During the 14th and 15th it advanced eastward over the Pacific coast. 16th, by morning the barometer reached its maximum; at Roseburg, 30.47, and at Olympia 0.41 above the normal. Cool and generally clear weather prevailed from the Pacific coast to the Rocky Mountains, and extended southeastward, with increasing pressure, towards Texas and the Lakes. 17th, a. m., it was central over Wyoming, Colorado, Nebraska and Kansas; barometer at North Platte 0.30 above the normal. Freezing temperatures were reported as far south as Arizona and New Mexico. 18th, at Fort Sill, a. m. barometer 0.43 above the normal, with the barometric ridge extending over Lake Superior. During the day it continued southeastward, and by morning of the 19th was central over the Southwest. Later it disappeared over the Gulf of Mexico, with diminishing central pressure.

No. VI—apparently advanced southeastward over Manitoba during the night of the 18th, to the Upper Lakes on the 19th, and the Lower Lakes on the 20th. 21st, it covered the country from the Mississippi valley eastward, with cool, clear weather. In the morning it was central over the Upper Ohio valley, where it continued on the 22nd, but with increased pressure; barometer at Pittsburg, 30.51, or 0.50 above normal. During the day it passed to the South Atlantic coast.

Nos. VII and VIII.—During the 20th the pressure rapidly increased on the Pacific coast. 21st, by morning it was central on the coast of Oregon; Roseburg barometer 30.59, or 0.51 above the normal; p. m. barometer at Olympia 0.55 above normal. During the day it advanced northeastward around the low pressure then central over eastern Colorado. From Montana to Nevada and the northern portions of Arizona and New Mexico the minimum temperature fell to and below freezing. 22nd, it apparently developed a second, No. VIII, which passed over Montana into Manitoba; p. m. barometer at Fort Garry rose to 30.35; the centre was probably at some distance to the northward. 23rd, No. VII slowly advanced southeastward from Oregon, and on the 24th towards New Mexico, where it was dissipated on the 25th. No. VIII, on the 23rd, moved southeastward from Manitoba; midnight barometers at Parry Sound and Ottawa 30.46. 24th, it was central in the morning over eastern New York; at Albany, barometer 30.46, or 0.49 above normal. During the day it passed to the South Atlantic coast, with diminished pressure. After the 25th several high areas crossed the country from the north Pacific coast to the Mississippi valley, but not of sufficient importance to warrant describing them.

*Areas of Low Barometer.*—Eighteen have been charted. No. I was the most severe and destructive storm along the coast. No. X was next in point of severity, especially on the North Pacific, New Jersey and New England coasts.

No. I.—This severe storm, described in the *March Review* as No. XVI, and so destructive to shipping, crossed Nova Scotia on the 1st. From thence toward the Lakes and New Jersey the barometric gradient was remarkably steep, and northwesterly gales prevailed. To the southward beyond Bermuda vessels report having experienced terrific southerly gales, veering to westerly, at places of hurricane force, with high or tremendous seas. On Mt. Washington the hourly wind velocity reached 182 miles during the evening. The Off-shore Signals, which had been displayed the previous day along the New Jersey and New England coasts, were fully justified; they were lowered evening of the 1st, which was too soon for the New England coast where high off-shore winds continued on the 2nd.

No. II.—is a continuation of No. XVIII of *March*. During its rapid progress eastward on the 1st light rains were frequent in the Southern States, and it disappeared on the South Atlantic coast in the large area of low pressure which extended from Lake Huron, the Lower Lakes, South Atlantic States and Bermuda to Newfoundland. On the Texas coast high southerly winds were succeeded by a severe "Norther" as high pressure No. I moved southward. High southwest winds also prevailed at St. Marks, Fla. Off-shore Signals were ordered morning of the 1st for the Texas coast. Maximum velocities: N. 32 miles at Galveston and N. 48 at Indianola.

No. III.—The depression numbered XVII for *March* probably advanced northeastward to Oregon on the 1st of *April*. Light rains became general in California and Nevada, and extended to Oregon and Washington Territory the following day.

No. IV.—During the afternoon of the 1st its advance was indicated by rapidly falling barometer and very brisk winds in Dakota and Minnesota; southeast winds with snow at Fort Garry and Pembina. By midnight it was central in Minnesota. 2nd, it moved southeastward with diminishing central pressure and increasing winds. Heavy snow fell in its north and northeastern side, while to the southward clear weather prevailed. 3rd, as it progressed to the coast of Maine, the central pressure continued falling; midnight barometer at Portland 29.28, 0.65 below the normal. Along the Middle Atlantic and southern New England coasts light rains occasionally fell, but thence to the Lakes snow prevailed. From North Carolina to the Lakes and New England northwesterly gales accompanied it. 4th, it moved northeast toward Newfoundland, producing heavy snow-fall. The p. m. barometer at Sydney fell to 29.02, or 0.84 below the normal. To the westward the winds gradually diminished in force. Cautionary Signals were ordered night of the 2nd (late) for Lake Erie; also morning of the 3rd for Lake Michigan (late) and the North Carolina and New Jersey coasts. Off-shore Signals were hoisted during the latter date from North Carolina to Maine. Maximum velocities: NW. 40 at Milwaukee, N. 35 at Grand Haven, NW. 46 at Sandusky, NW. 52 at Cleveland, NW. 44 at Cape Hatteras, W. 44 at Cape Henry, NW. 60 at Baltimore, NW. 62 at Cape May, N. 50 at Sandy Hook, NW. 48 at Wood's Holl, and N. 31 at Portland.

No. V.—approached the Pacific coast on the 4th; p. m. barometer at Roseburg 0.24 below the normal. Threatening and rainy weather prevailed from California and Oregon to southwestern Montana, with thunderstorm at Sacramento. 5th, it rapidly progressed east and southeastward to eastern Colorado, with frequent rains, partly as snow in Nevada and Wyoming. West of the Mississippi valley diminishing pressure, rising temperature and increasing southerly winds marked its advance; velocity at North Platte, SE. 44, at Dodge City and Fort Sill, S. 32 miles. 6th, light rains fell from Utah to Iowa, Indiana, Kentucky, Tennessee and Arkansas, with N. 52 miles at Pike's Peak. 7th, it passed to the South Atlantic States where it was dissipated; accompanied by light rains over the Southern States. The Cautionary Signals ordered morning of the 6th for Indianola and Galveston were justified at former—S. 30 miles; those for Lake Michigan, only partly. The Off-shore Signals for the North Carolina coast on the 7th were verified as to velocity, but not as to direction; NE. 39 at Cape Lookout to N. 45 miles at Cape Henry.

No. VI.—This disturbance probably developed from No. V to the north of the Lake region on the 6th. 7th, it passed eastward at some distance to the north of New England. From the lower St. Lawrence valley to Nova Scotia light snows or rains accompanied it. Brisk to high westerly winds succeeded it, which during afternoon of the 8th increased at Father Point to SW. 45 miles.

No. VII.—During the afternoon of the 6th the pressure fell below the normal along the Pacific coast, with rain in the northern half of California and southwestern Oregon, and thunderstorm at Roseburg. 7th, the pressure reached its minimum at Olympia; a. m. barometer 29.70, or 0.28 below normal. Light rains fell from the coast to Idaho and Utah, with thunderstorm at Red Bluff, and high winds at places; Pioche, Nev., S. 35, and Umatilla, Or., SW. 28 miles. By midnight the centre had reached Montana, and the Virginia City barometer fell 0.35 below normal. 8th, it advanced to southern Dakota; midnight barometer at North Platte, 0.44 below normal. Light rains or snow were frequent from thence to the Middle and North Pacific coasts, with high winds at places; NW. 43 at Cheyenne. Rapidly falling barometer and increasing southeasterly winds and cloudiness, followed by rain from the Northwest to the Southwest, marked its advance. At Ft. Sill the wind reached a velocity of SE. 36; at North Platte, SE. and W. 78, and at Breckenridge SE. 42 miles. 9th, a. m. barometer at Yankton, 0.58 below normal, with the barometric trough running thence north and south. Light rains occasionally fell over the Southwest, but thence to the Northwest, Upper Lakes, Lake Erie, Ohio valley and Tennessee rainy weather prevailed, with high winds and gales at places, and thunderstorms to the south of its track; NW. 40 at Fort Buford, NW. 72 at North Platte, NW. 52 at Cheyenne, and SW. 32 at St. Louis. 10th, by morning the barometer at Milwaukee read 29.05, or 0.85 below the normal. The rain-area extended eastward to the Atlantic coast, but generally as snow from the Lakes to New England, with severe gales at many points: SW. 32 miles at Milwaukee, E. 37 at Escanaba, E. 36 at Alpena, SW. 34 at Jacksonville and Wilmington, SW. 44 at Kittyhawk, S. 44 at Cape May, N. 36 at Sandy Hook, and N. 36 at Boston. The central depression moved very quickly from Lake Michigan to the east of New Jersey. During the afternoon the barometric trough extended from Illinois to Virginia, New Jersey and Pennsylvania. 11th, as it progressed northeastward to Nova Scotia and severe easterly gales, backing to northerly, with rain, sleet and snow, accompanied it; N. 42 at Boston, NE. 36 at Portland, NE. 56 at Eastport, and SE. 28 at Halifax. Cautionary Signals were ordered morning of the 8th for Lakes Superior and Michigan and the Texas coast; night of 9th for Lake Erie, New Jersey and North Carolina coasts; 10th, Lakes Huron (late) and Ontario, and New En-

gland. They were fully justified, except for Lake Huron. Warnings were also sent for the Canadian stations, but too late for those from Nova Scotia to the mouth of the St. Lawrence.

\* No. VIII.—Rainy weather prevailed in Washington Ty. and Oregon on the 9th, and extended to central California the 10th as the central depression advanced southeastward. At San Francisco the west wind reached 29 miles. 11th, light rains fell during the morning in Nevada and southern California, with high northerly winds to the north of the centre. 12th, light rains or snow from Arizona and southern California to Colorado and Utah, with SW. gale (35 miles) at Ft. Craig, N. Mex. 13th, as it approached Indian Ty. threatening and rainy weather prevailed from the Southwest to the Lower Missouri valley and Wyoming. 14th, the central pressure diminished; p. m. barometer at Cairo 0.44 below normal. The rain-area extended eastward to Ohio, western portion of Middle States, and the South Atlantic States, with thunderstorms along the track of its centre. High northerly winds occurred on Lake Michigan and southerly along the Central Gulf and North Carolina coasts; N. 30 at Milwaukee, S. 34 at New Orleans; and S. 32 at Smithville. 15th, as it passed eastward over the Middle Atlantic coast it was accompanied by rainy weather from the Lower Lakes to the Atlantic coast, with gales at places; NE. 34 miles at Sandusky, and S. 34 at Cape Hatteras. Night of the 14th Signals were ordered for North Carolina coast (late) and Cape May; 15th, from New Jersey to Connecticut, and for Lake Erie (late). Off-Shore Signals were hoisted on the Texas coast night of the 15th. Except along the North Carolina coast the Signals were not justified. The warnings sent for the Canadian stations on the Lakes were not verified.

No. IX.—produced threatening weather and frequent light rains during its progress from northern Dakota and Manitoba to the Lakes and Middle States.

No. X.—During the night of the 12th light rains commenced falling along the coast of Washington Ty. and Oregon. 13th, rainy weather continued and extended south to central California, with increasing southerly winds; SE. 28 miles at Red Bluff. At night the centre of the storm passed into the interior. 14th, a. m. barometer at Olympia 29.56, or 0.42 below normal. Its rapid movement to Wyoming on this, and to Texas on the succeeding, day was probably due to the pressure having been left below the normal over that region by No. VIII. Frequent but generally light rains fell from the Pacific coast to Colorado and western portions of Wyoming and Montana. At Umatilla, Or., the westerly wind reached 30 miles. 15th, by midnight the storm-centre had reached southeastern Texas, with frequent thunderstorms throughout the Gulf States; Galveston barometer 0.46 below normal. 16th, the rain-area extended to the Ohio valley, Pennsylvania and New Jersey, with thunderstorms throughout the Gulf and South Atlantic States, and increasing winds along the coast. At Indianola the northwest wind increased to 48 miles. 17th, north of its track to the Lower Lakes and southern New England, rainy weather, with northeasterly gales, prevailed; southward to Florida, thunderstorms, with southerly gales veering to westerly; NE. 35 miles at Cleveland, NE. 42 at Sandy Hook, NE. 40 at Atlantic City, S. 40 at Cape Hatteras, SW. 48 at Cape Lookout, SW. 40 at St. Marks, and S. 28 at Punta Rassa and Key West. 18th, as it moved northeastward along the coast it increased in severity; p. m. barometer at New London 0.60 below normal, and at Wood's Holl it fell to 29.20; in northern New England and Nova Scotia the rain changed to snow; NW. 48 miles at Cape May, NE. 50 at Sandy Hook, NW. 44 at Wood's Holl, NE. 54 at Boston, NE. 33 at Portland, NE. 35 at Eastport, and NE. 114 on Mt. Washington. The two following days it disappeared to the eastward of Nova Scotia. Off-Shore Signals were ordered for the Texas coast night of the 15th; lowered morning of the 16th, not justified; again hoisted afternoon 16th, justified, but late. Cautionary Signals were ordered up the 16th along Lakes Michigan and Erie, Connecticut to North Carolina, at Mobile and St. Marks; 17th, from Connecticut to Maine. They were well justified, except for Lake Michigan and Mobile. Warnings were also sent for the Canadian stations on Lakes Erie and western Ontario the 16th, but probably not justified; 18th, for those in the St. Lawrence valley, New Brunswick and Nova Scotia, and generally verified.

No. XI.—was a slight depression in which the barometers did not fall below the normal until it reached the lower Ohio valley. The accompanying winds were fresh to brisk, and there was scarcely any precipitation.

No. XII.—The pressure began diminishing along the California coast on the 17th. 18th, it extended northeastward toward Utah and Montana, with light rains from Oregon and northern half of California to western Montana. The centre probably passed over northern California into Idaho. 19th, it reached Montana and Wyoming; p. m. barometer at Virginia City 0.24 below normal. 20th, by midnight it had advanced to Nebraska, with increasing southerly winds thence toward the Mississippi valley; SE. 62 at North Platte and SW. 62 on Pike's Peak. The pressure was high over the entire country to the eastward, and having been closely followed by No. XIII it was merged into it during the 21st.

No. XIII.—The centre passed eastward into Washington Ty. during the night of the 19th, with rainy weather and strong southerly winds thence to central California; SE. 30 miles at Red Bluff; midnight barometer at Olympia 0.48 below normal. 20th, it crossed Montana, with frequent rain or snow and at places high winds or gales between the Pacific coast, the Northwest and Colorado. 21st, it united with No. XII, and the central pressure, which in the morning had been 0.46 below the normal at North Platte, began rising, due to the high pressure to the eastward and to that which rapidly followed it from the North Pacific coast. Rains were frequent in the Missouri valley, partly changing to snow towards Utah and New Mexico, with high winds; E. 32 miles at Fort Stevenson, Dakota, SE. 32 at Yankton, S. 52 at Fort Sill, SE. 32 at Indianola and NW. 58 at Chicago. On the 22nd, by midnight the pressure had risen above the normal at all

stations, except at Santa Fé. Rainy weather prevailed from the Northwest to New Mexico and Texas, with very heavy thunderstorms in last. At Indianola the hourly wind-velocity reached, SE. 35 miles. 23d, as it moved northward the central pressure again fell below the normal; NE. gale occurred at Duluth; heavy rains in Texas and Dakota. 24th, light rains were frequent from the Northwest and Upper Lakes to Southwest. On the Texas coast a disturbance developed, which caused heavy rains and northeast gales. 25th, it disappeared into Canada, accompanied over the lakes by rainy weather, occasional thunderstorms and gales; W. 32 miles at Grand Haven, SW. 34 at Port Huron, SW. 35 at Cleveland, and W. 32 at Rochester. The Cautionary Signals ordered for the Texas coast on the 21st were fully justified, but lowered too soon. On the 23rd Signals were also ordered for Lakes Superior, Huron and northern Michigan, but succeeded by gales at Duluth alone; 25th, for Lakes Michigan, (late) Huron and Erie and the New Jersey coast—partly justified. Warnings were despatched mornings of the 23d and 25th for Canadian lake stations.

No. XIV—was a slight depression which appeared off the coast of Nova Scotia on the 23rd, producing light rains thence to Lake Ontario. Maximum velocities: NE. 36 at Father Point, N. 36 at Portland and N. 40 at Boston. Signals were ordered for Eastport, and, on account of a high pressure advancing over the Lake region, for Lake Ontario, the New Jersey and North Carolina coasts. They were only justified at Eastport. Warnings were also sent for St. John's and Halifax.

No. XV—advanced southeastward into Dakota the 25th, with light rains and brisk winds. 26th, the a. m. barometer at Pembina 0.46 below normal. While the central depression moved into Canada, in the barometric trough to the southward over the Gulf States rains were numerous. In the extreme Northwest gales, with rain, occurred; N. 35 miles at Bismarck. 27th, a secondary depression developed and passed eastward north of the St. Lawrence valley during the following day. Rainy weather accompanied it as far south as the Gulf States. Signals ordered for Lake Michigan on the 27th were not justified.

Nos. XVI and XVII.—The former was a slight depression, which produced light rains and occasionally high winds, during its advance over Minnesota and the Lake region; W., 32 miles, at Sandusky. The latter developed over the South Atlantic States. 30th, by midnight they reached Maine as a well-marked depression; barometer at Eastport 29.54, or 0.30 below normal. Rainy weather accompanied them, and northeast gale at Father point. The Signals ordered the 29th for Lakes Michigan and Huron were late and not justified; 30th, for Eastport, followed by SE. gale. The Off-Shore Signals on the 30th from North Carolina to Massachusetts were very generally succeeded by high off-shore winds.

No. XVIII.—The charts of barometric departures from the normals show that a very slight depression crossed Oregon and northern California on the 28th and Utah and Colorado the 29th without producing any precipitation, except at Virginia City. 30th, as it reached Texas the central pressure diminished, and generally light rains were reported from Wyoming and Colorado to Tennessee and Arkansas.

## INTERNATIONAL METEOROLOGY.

On chart No. IV are shown the probable tracks of storm-centres over the oceans, deduced from data received at this office up to May 5th, and in the upper right-hand corner will be found an index to the same. In the upper left-hand corner is a small table giving the approximate wind direction and probable maximum velocities (in miles per hour and meters per second) attending the depressions on the dates named. The following is a brief notice of the same, and also of some storms over the Southern Hemisphere:

*North Atlantic Ocean.*—No. I probably developed slowly, during the 2nd of March, about in the position shown, as a secondary centre to low pressure area No. I of the *March Review*, which latter had probably passed northward on the 1st. No. II is a continuation of No. II low pressure area of *March*, and is only repeated on present chart as it appears probable that during March 5th, a barometric trough extended from its centre far southward over the ocean, in the southern extremity of which storm No. III developed, as shown on present chart. No. IV is a continuation of low pressure area No. VII of *March Review*; it rapidly passed eastward over Newfoundland during the latter part of the 12th, and probably moved southward off the European coast from the 15th to the 18th, although reports are too meagre to determine the position of its centre with much accuracy. On the 19th and 20th, it was probably joined off the Spanish coast by the following area, after which it moved eastward over the Mediterranean. No. V is a continuation of low area No. IX of the *March Review*; it passed eastward over Newfoundland during the night of March 15th, moved eastward until the 18th, thence southward and probably joined the preceding area on the 19th. No. VI developed during the 17th over the Gulf of Mexico, as low area No. X of the *March Review* moved northeastward over the Atlantic States; it passed over the Bermudas on the 19th, and to the southward of Newfoundland on the 20th, after which it has not yet been traced as it was probably not accompanied by high winds. No. VII is a continuation of low area No. XI of the *March Review*: it passed eastward south of Newfoundland on the morning of the 22nd, and having developed increased energy on the 25th, moved southeastward over France to the eastern Mediterranean by the 30th. No. VIII is a continuation of low area No. XIII of the *March Review*; it probably passed eastward to the north of Newfoundland on the 25th, developed increased energy on the 27th, and moved thence to the north of Scotland. No. IX is a continuation of No. XIV of *March Review*; it was felt at the Bermudas on the morning of the 29th, but has not been traced after the 30th. No. X is a continuation of low area No. XVI of *March Review*, and No. I of the present *Review*; this storm-centre arrived off the coast of Ireland on April 5th, and passed thence over central Europe to the Black Sea by the 10th. No. XI developed over the western Mediterranean on April 10th.